What is claimed is:

1. A method for informing a receiver connected to one or more networks of a content targeting opportunity and for the receiver to exercise the opportunity by selecting and displaying content from a selection of content comprising any or all of the steps of:

   • Securely receiving and securely storing characteristic information about the viewer

   • Securely receiving and securely storing characteristic information about a selection of content

   • Securely receiving and securely storing characteristic information about viewing opportunities

   • Securely receiving and decrypting the viewer, content and opportunity characteristics

   • Determining which versions of content are physically accessible to the receiver based on the characteristics of the content and the opportunity

   • Determining which versions of the content the receiver is permitted to access

   • Running an opportunity matching process to determine which accessible and permitted versions of the content best match the viewer, opportunity and content characteristics and records of prior content viewing

   • Accessing and displaying the content when the opportunity is exercised

   • Securely storing the results of the convent viewing

   • Securely reporting the information on the content viewing to a reporting facility.

2. A method as defined in claim 1, for a receiver connected to one or more networks to select and acquire content from a selection of content for

subsequent targeted content viewing opportunities comprising any or all of the steps of:

- Securely receiving and securely storing characteristic information about the viewer

- Securely receiving and securely storing characteristic information about a selection of content

- Securely receiving and securely storing characteristic information about viewing opportunities

- Securely receiving and decrypting the viewer, content and opportunity characteristics

- Determining which versions of content are physically accessible to the receiver based on the characteristics of the content and the opportunity

- Determining which versions of the content the receiver is permitted to access

- Running a content matching process to determine which accessible and permitted versions of the content best match the viewer, opportunity and content characteristics and records of prior content viewing

- Determining if permission is available to use storage accessible to the receiver with characteristics suitable for real-time playback with predictable content access latency characteristics ("local storage")

- Determining if sufficient space is available on local storage, and deleting any less-suitable content to make space available

- Acquiring and storing the content on the local storage

OPPORTUNITY TYPES

3. The method of claim 1, where the opportunity is based on the invocation of a function or group of functions on the receiver device

4. The method of claim 1, where the type of content selected can be based on the characteristics of the opportunity

5. The method of claim 1, where the characteristics of the opportunity and/or content can cause the process to select the content for display based on the timing and/or content selection for prior opportunities

6. The method of claim 1, where the characteristics of the opportunity and/or content can cause the process not to select any content for display based on the timing and/or content selection for prior opportunities

CONDITIONAL ACCESS

7. The method of claims 1, where the opportunity matching process and/or the content matching process can be executed in whole or in part within one or more components of a receiver and/or to one or more devices on a network

8. The method of claim 1, where the viewer characteristics can be located in whole or in part within one or more components of a receiver and/or to one or more devices on a network

9. The methods of claim 1, where any or all of the permission to access storage, the storage of some or all of the characteristics, the execution of all or a portion of the opportunity matching process and/or the content matching process, the storage of the content viewing results, and the communication or the viewing results can be performed and managed on one or more of the following facilities:

- a smart card
- a security module which can include software and interfaces to the receiver and a smart card
- the facilities of an analog or digital television conditional access system, which may include any of a smart card, a security module and other hardware within the system
- the facilities for electronic commerce system, which may include a smart card, a security module and other hardware within the system

- a smart card which has an operating system that allows multiple independent applications
- one or more grant/deny type servers accessible on a network

- one or more Kerberos of other ticket server systems accessible on a network
- an interactive application system including those in claim 23

10. The methods of claim 1, where, in whole or in part the characteristics of the content, applications and/or viewers can be encrypted prior to transmission and decrypted and accessed using any of the facilities of claim 9.

11. The methods of claim 1 where the encryption and decryption can use any of the facilities of claim 9.

12. The method of claim 1, where the content, opportunity and viewer descriptors can include a variable and extensible number of characteristics

13. The method of claim 1, where all or a portion of the algorithm for the processes for matching the content, viewer and/or opportunity characteristics can be transmitted as one of the opportunity or content characteristics

14. The method of claim 1, where the viewer characteristics can beindependently available on the receiver, including any of the facilities of claim 9, including but not limited to:

- Postal code
- Telephone number
- Access permissions, including digital television service and channel authorizations
- Prior purchases, including television pay-per-view movies
- Viewer channel selection and EPG display profiles
- Viewer content filtering criteria, including VCHIP settings and ratings

15. The methods of claim 1, where the execution of the content matching process and/or the opportunity matching process can be performed within any of the facilities of claim 9, so that only some or none of the characteristics are retrieved from the facilities of claim 9, and only the result of the matching processes is returned without returning any of the characteristics

16. The methods of claims 1 and 2, where the characteristic information for an instance of content can include one or more of the following:

- A maximum number of repetitions

- A minimum amount of time between showings

- A maximum number of incomplete repetitions

- A time window for usage

- Technical requirements for usage of the content on the receiver

- The source or sources for the content

- A sequence number for content consisting of multiple instances of content within a sequence

17. The methods of claim 1, where the exercising opportunity can be based on the invocation of a function on the receiver, including:

- Turning on the receiver

- Turning off the receiver

- Starting the playback of stored content

- Pausing the playback of stored content

- Starting a communication session

- Stopping a communication session

- Pausing the viewing of broadcast content through the use of time-delay storage features

- Resuming the viewing of broadcast content following the use of time-delay storage features

18. The methods of claim 1, where the opportunity can be based on any one of a plurality of advertising slots available on a plurality of channels which are related for the purposes of sharing the advertising on each channel for managing and targeting the advertising opportunities

19. The methods of claim 1 where the opportunity can be based on any one of a plurality of advertising slots available on a single channel.

20. The methods of claim 1, where the opportunity and selection of content can be based on a combination of the exercising of opportunities based on a combination of any or all of the methods of claims 16, 17, 18 and 19 and the frequency of, time of, and time separating the exercising of said opportunities

21. The methods of claim 1, where the receiver can be connected to one or more networks which can consist of any one or more of the following, but not limited to:

- a direct-to-home satellite broadcasting system (DTH)
- a cable television network
- a terrestrial radio frequency network, including LMDS and MMDS
- a packet switched terrestrial network, including ATM and DSL networks
- packet switched or routed networks consisting of multiple channels on multiple streams of the transport layer, including but not limited to ATM virtual circuits in all their embodiments, and IP unicast or multicast streams
- a terrestrial cellular communication network, including telephone networks
- the public telephone network
- the Internet, through cable, xDSL, telephone, wireless or other broadband connection methods, including MMDS and LMDS
- a terrestrial television broadcast network, including NTSC, ATSC, DVB and other protocols

22. The methods of claim 1, where the transmission protocol for the characteristics can consist of one or more of the following operating over the networks of method 21, including but not limited to:

- MPEG transport streams
- DVB transport streams
- Vertical blanking interval or other portions of television signals allowing the carriage of data, including ATVEF transport A and transport B streams
- TCP/IP transport streams, either directly within the networks of method 21, as defined within another specification like DVB or any of the IETF specifications

- Private data fields within a DVB Event Information Table (EIT)

23. The methods of claim 1, where the algorithms, processes and characteristics can be represented as part of or extensions to the specifications of one or more interactive applications and communication specifications, including but not limited to:

- JavaTV
- OpenTV
- ATVEF
- DVB MHP
- WAP
- NTT DoCoMo
- Wink

24. The methods of claim 1, where the receiver is a digital set-top cable or satellite television receiver; a set of components within a television; a personal computers with appropriate network connections, a cellular telephone or a personal digital assistants (PDA); or a gaming console.

25. The methods of claim 1, where the receiver can have the ability to handle multiple content streams simultaneously, allowing the acquisition of characteristics and content simultaneously with the viewing of content

26. The methods of claim 1, where the receiver can acquire content using viewing facilities when the receiver is not being used for viewing

27. The methods of claim 1, where the content alternatives can consist of content on a variety of services which are unrelated except for the synchronization of the start and end times of the content alternatives

28. The methods of claim 1, where the content alternatives can consist of streams of alternative content which can be used by a plurality of services as a source of content alternatives, and the scheduling of the alternate content and the services allows the alternatives to be shared among the plurality of services

29. The methods of claim 28 where the bandwidth can be available from services which are not airing through simultaneous substitution requirements

30. The methods of claim 28 where the bandwidth can be available from services which are temporarily off air, whether on a regular or occasional basis.

31. The methods of claim 1, where the alternative versions of content can be available from a switched network like DSL

32. The methods of claim 1, where the content alternatives can be transmitted in non-real-time, being either faster or slower than real-time, using methods other than the primary content transfer mechanism

33. The methods of claim 1, where the start point for the switch to an alternative content stream can be based on timing relative to a reference clock, where the relative clocks consists of any one of:
   - A time-of-day reference time stream available to the receiver, of which the DVB time date table (TDT) is an example
   - An MPEG presentation time stamp (PTS)
   - An MPEG display time stamp (DTS

34. The methods of claim 1, where the start point for the switch to an alternative content stream can be based on an amount of time from a detectable event in the video stream, such as the DTMF signal other trigger mechanisms or data elements that can be used as trigger mechanisms within analog or digital streams

35. The methods of claim 1, where the matching can be based on geographical locations and the locations and the receiver's knowledge of its location are based on the technology used to implements black-outs within the receiver, through a matching of content to each area within the black-out pattern.

36. The methods of claim 1, where the user's inputs can be recorded and reported to calculate the probability of which viewer within a household was watching the program at any given time

37. The methods of claim 1, where the level of detail of detail to be reported can be based on the permission the user has agreed to, and the level can be controlled within the receiver functions

38. The methods of claim 37 where the viewer's permission is obtained by one or more of the following:

- An agreement at the time of acquisition of the receiver by the viewer, which may be obtained through a subsidized purchase or rental price

- A reduction in the price of the service, or a credit towards specific services

- A direct payment to the viewer

39. The methods of claim 1, where the viewing of the selected content alternative can be deemed to be uninterruptible, regardless of the action taken by the user on the inputs to the receiver

40. The methods of claim 1, where the indications that the content is being recorded or is to be recorded at a later time can be used as a criteria for matching the content to the opportunity

41. A method for providing copy protection on the content being transmitted by using existing copy protection indicators and/or extensions to those indications to indicate one or more of the following restrictions are in place for the content:

- The receiver is not permitted to record the content to storage

- The receiver is permitted to hold only enough content in storage to allow a pause feature to be implemented. The pause feature may also include a limited amount of rewind time

- The receiver is permitted to record the content to storage, but only if encryption facilities are available. The encryption and subsequent decryption and playback, may require the facilities of the conditional access system.

- Limitations may be placed on the playback, including time limits and number of replays

- The receiver must include analog copy protection mechanisms within the video signal to prevent recording on VCRs

- The ability to record and replay and the time limits and number of replays may be subject to permissions assigned by a conditional access system, or as part of rights acquired during the purchase of a pay-per-view event.

42. The methods of claims 2, where the storage is a pool of storage available on any of the connected networks, and the content is managed in a manner that any specified piece of content is only stored once on the network, even though multiple users or the content selection methods for those users have requested storage of the content

43. The method of claim 2, where the characteristics of content that is already stored can be updated by transmitting changes to the characteristics

44. The method of claims 1, where multiple versions of interactive applications can be sent on and cached from one stream, and triggered after the service has been switched to an alternative content stream.

45. The methods of claim 1, where the receiver can have the ability to handle multiple content streams simultaneously, and the facilities for handling a separate stream is used for tuning to or queing from storage the alternate content display to allow a seamless or near-seamless transition to and from the alternate stream.

46. The methods of claim 1, where the content can be modified to accommodate delays in tuning to and returning from the alternate content selection. These modifications can include designing the content so that the start and end portions are less relevant and not significant to the message if missed; a temporal compression of the alternate content so that the start and end are blank or irrelevant for the amount of time it takes, and the message is shortened from its original length through accelerated playback or the removal of selected frames to fit within the shortened display time.

47. The methods of claim 1, where the selection of the content alternatives, the selection and attribution of characteristics to opportunities and content, the transmission mechanisms selected for the content and opportunities, and the methods used for matching the content and

opportunities can be based on yield management methods, an example of which is optimal dynamic pricing.

48. A method for informing a receiver connected to one or more networks of a content targeting opportunity and for the receiver to exercise the opportunity by selecting and displaying content from a selection of content, the method comprising the steps of:

receiving and storing characteristic information about the viewer;

receiving and storing characteristic information about a selection of content;

receiving and storing characteristic information about viewing opportunities;

determining which versions of content are physically accessible to the receiver;

determining which versions of the content the receiver is permitted to access;

running an opportunity matching process to determine which accessible and permitted versions of the content match the viewer, opportunity and content characteristics ;

accessing and displaying the content when the opportunity is exercised;

storing the results of the convent viewing;

reporting the information on the content viewing to a reporting facility.

49. A method of selecting and acquiring content from a selection of content for subsequent targeted content viewing opportunities by a receiver connected to one or more networks, the method comprising the steps of:

receiving and storing characteristic information about the viewer;

receiving and storing characteristic information about a selection of content;

receiving and storing characteristic information about viewing opportunities;

determining which versions of content are physically accessible to the receiver;

determining which versions of the content the receiver is permitted to access;

running a content matching process to determine which accessible and permitted versions of the content best match the viewer, opportunity and content characteristics;

determining if permission is available to use storage accessible to the receiver with characteristics suitable for real-time playback with predictable content access latency characteristics ("local storage");

determining if sufficient space is available on local storage;

deleting content to make space available;

acquiring and storing the content on the local storage.

50. A method for the targeting of content presentation to individual users in a communications network including management and reporting, comprising the steps of:

- Receiving from content providers, potential content for presentation to users; and

- Presenting to a user content selected from said potential content based on information known about said user.

51. A method for the targeting of content presentation to individual users in a communications network including management and reporting, comprising the steps of:

- Receiving from content providers, potential content for presentation to users;

- Receiving from a user requests for content and other actions related to receipt of said content such as 'pause' requests;

5

- Selecting, using information known about said user, said requests and said actions received from said user, which of said potential content to present to said user;

- Presenting to said user said selected content; and

- Recording and reporting the fact that said content has been presented

10 to said user.

52. A system for the targeting of content presentation to individual users in a communications network including management and reporting, comprising the steps of:

15

- Means for receiving from content providers, potential content for presentation to users; and

- Means for presenting to a user content selected from said potential content based on information known about said user.

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53. A system for the targeting of content presentation to individual users in a communications network including management and reporting, comprising:

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- Means for receiving from content providers, potential content for presentation to users;

- Means for receiving from a user requests for content and other actions related to receipt of said content such as 'pause' requests;

- Means for selecting, using information known about said user, said requests and said actions received from said user, which of said potential content to present to said user;

- Means for presenting to said user said selected content; and

5

- Means for recording and reporting the fact that said content has been presented to said use